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USPT	((438/29 |438/34)!.CCLS.)	287	L1

DWPI

DERWENT-ACC-NO: 1997-451507
DERWENT-WEEK: 200111

TITLE: Transistor substrate for liquid crystal display - comprises transistor,
over substrate, having gate, source, drain, semiconductor layer and gate insulation layer, and protection film, over transistor, including specific material
INVENTOR: KIM, J; KIM, W ; LEE, H ; LIM, K ; LYU, K ; PARK, S ; KIM, J H ; KIM,
W K ; LEE, H Y ; LIM, K N ; LYU, K H ; PARK, S I ; RYU, K ; LIM, G N ; KIM, W G
; RYOO, G H
PATENT-ASSIGNEE: LG ELECTRONICS INC[GLDS], KINSEISHA KK[GLDS], LG PHILIPS LCD CO LTD[GLDS]
PRIORITY-DATA: 1996KR-0023448 (June 25, 1996) , 1996KR-0008344 (March 26, 1996)
, 1996KR-0022404 (June 19, 1996) , 1996KR-0023295 (June 24, 1996)
, 1996KR-0023296 (June 24, 1996)
PATENT-FAMILY:

PUB-NO	PUB-DATE	LANGUAGE	PAGES	MAIN-IPC
KR 232682 B1	December 1, 1999	N/A	000	G02F 001/136
GB 2311653 A	October 1, 1997	N/A	083	G02F 001/136
FR 2746961 A1	October 3, 1997	N/A	065	H01L 021/312
DE 19712233 A1	October 30, 1997	N/A	052	H01L 029/786
JP 10041519 A	February 13, 1998	N/A	027	H01L 029/786
KR 97066694 A	October 13, 1997	N/A	000	G02F 001/136
KR 98003740 A	March 30, 1998	N/A	000	G02F 001/136
KR 98003743 A	March 30, 1998	N/A	000	G02F 001/136
KR 98003744 A	March 30, 1998	N/A	000	G02F 001/136
KR 98003745 A	March 30, 1998	N/A	000	G02F 001/136
GB 2311653 B	August 4, 1999	N/A	000	G02F 001/136
US 6100954 A	August 8, 2000	N/A	000	G02F 001/1333
KR 229609 B1	November 15, 1999	N/A	000	
KR 229612 B1	November 15, 1999	N/A	000	G02F 001/136
KR 232681 B1	December 1, 1999	N/A	000	G02F 001/136
				G02F 001/136

APPLICATION-DATA:

PUB-NO	APPL-DESCRIPTOR	APPL-NO	APPL-DATE
KR 232682B1	N/A	1996KR-0023448	June 25, 1996

GB 2311653A	N/A	1997GB-0006354	March 26, 1997
FR 2746961A1	N/A	1997FR-0003615	March 25, 1997
DE 19712233A1	N/A	1997DE-1012233	March 24, 1997
JP 10041519A	N/A	1997JP-0091520	March 26, 1997
KR 97066694A	N/A	1997KR-0009366	March 19, 1997
KR 98003740A	N/A	1996KR-0022404	June 19, 1996
KR 98003743A	N/A	1996KR-0023295	June 24, 1996
KR 98003744A	N/A	1996KR-0023296	June 24, 1996
KR 98003745A	N/A	1996KR-0023448	June 25, 1996
GB 2311653B	N/A	1997GB-0006354	March 26, 1997
US 6100954A	N/A	1997US-0826804	March 25, 1997
KR 229609B1	N/A	1996KR-0023296	June 24, 1996
KR 229612B1	N/A	1996KR-0023295	June 24, 1996
KR 232681B1	N/A	1996KR-0022404	June 19, 1996

INT-CL (IPC): G02F001/133; G02F001/1333 ; G02F001/1343 ; G02F001/136 ; G09F009/35 ; H01L021/312 ; H01L021/336 ; H01L027/12 ; H01L029/786
ABSTRACTED-PUB-NO: GB 2311653A
BASIC-ABSTRACT: A transistor substrate for a liquid crystal display (LCD) comprises: (a) a substrate (111); (b) a transistor, over the substrate, having a gate (113), a source (121, 123), a drain (121, 127), a semiconductor layer (119) and a gate insulation layer (157); and (c) a protection film (159), over the transistor, including a material derived from fluorinated polyimide, Teflon
(RTM), Cytop (RTM), fluoro polyaryl ether, fluorinated para-xylene, perfluoro cyclobutane (PFCB) or benzocyclobutene (BCB).

Also claimed are: (i) a transistor substrate as above in which the gate insulation layer (157) includes a material derived from fluorinated polyimide, Teflon (RTM), Cytop (RTM), fluoro polyaryl ether, fluorinated para-xylene, PFCB
or BCB; (ii) a method for manufacturing the transistor substrate which comprises forming the transistor over the substrate (111) and forming the protection film (159) over the transistor; (iii) a semiconductor device insulating layer as above; (iv) a semiconductor switching device for a LCD where the gate insulation layer and/or the protection layer comprise an insulating layer as above; (v) a thin film transistor for a LCD, where the gate
insulation layer and/or the protection layer comprise an insulating layer as above; and (vi) a method of manufacturing a semiconductor device which comprises spin coating an insulating layer as above.

ADVANTAGE - The LCD does not have a stepped profile due to a multilayered structure. It has less parasitic capacitance and is free from electron trap and poor adhesion at the interface between the insulation and semiconductor layers. The gate insulation layer has a smooth surface which prevents problems
such as line disconnection and/or short circuit. Even though the gate

insulation layer is thin, it has sufficient insulation property. The application of an organic film on the gate electrode does not affect the function of a thin film transistor. This is because the thickness of the organic film is reduced to compensate the low dielectric constant of the organic film. Due to the low dielectric constant of the organic material, spaces or gaps between pixel electrodes and gate and signal bus lines are not required. Consequently, it is possible to form a wider pixel electrode than in
conventional methods. This yields an improved aperture ratio and high quality contrast can be achieved.

ABSTRACTED-PUB-NO: GB 2311653B
EQUIVALENT-ABSTRACTS: A transistor substrate for a liquid crystal display (LCD)
comprises: (a) a substrate (111); (b) a transistor, over the substrate, having a gate (113), a source (121, 123), a drain (121, 127), a semiconductor layer (119) and a gate insulation layer (157); and (c) a protection film (159), over the transistor, including a material derived from fluorinated polyimide, Teflon
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Also claimed are: (i) a transistor substrate as above in which the gate insulation layer (157) includes a material derived from fluorinated polyimide, Teflon (RTM), Cytop (RTM), fluoro polyaryl ether, fluorinated para-xylene, PFCB
or BCB; (ii) a method for manufacturing the transistor substrate which comprises forming the transistor over the substrate (111) and forming the protection film (159) over the transistor; (iii) a semiconductor device insulating layer as above; (iv) a semiconductor switching device for a LCD where the gate insulation layer and/or the protection layer comprise an insulating layer as above; (v) a thin film transistor for a LCD, where the gate
insulation layer and/or the protection layer comprise an insulating layer as above; and (vi) a method of manufacturing a semiconductor device which comprises spin coating an insulating layer as above.

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US 6100954A

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conventional methods. This yields an improved aperture ratio and high quality contrast can be achieved.
CHOSEN-DRAWING: Dwg.10G/21
DERWENT-CLASS: A85 E14 L03 P81 P85 U11 U12 U14
CPI-CODES: A12-L03B; E10-H04A1; E10-H04A2; E10-J02B4; L03-G05B; L04-E01;
EPI-CODES: U11-C01J8; U11-C05F5; U12-B03A; U14-H01F; U14-K01A2B;

DID:
DE 19712233 A1